

1998 OUTLOOK FOR THE U.S. SHIPBUILDING AND REPAIR INDUSTRY

OVERVIEW

The United States shipbuilding industry has made progress in its reemergence as an active participant in the commercial shipbuilding market. The stimulus for this evolution of the U.S. shipbuilding industry and its ability to aggressively enter and compete in the market was the "National Shipbuilding and Conversion Act of 1993" and the expanded Title XI Federal Ship Financing Program.

The Maritime Administration (MARAD), during fiscal year (FY) 1997 and the first half of FY 1998, approved 17 applications for Title XI financing for vessel construction. Included in these were two export projects. In addition, approval was given for two shipyard modernization projects. The estimated cost of all the approved Title XI projects was \$803 million with Title XI guarantees totaling \$572 million of this amount.

The U.S. orderbook, as of April 1, 1998, consisted of five tankers, one chemical tanker, two crude carriers and three ferries. During 1997 and the first quarter of 1998, U.S. shipyards received orders for the construction of six new oceangoing commercial ships, four containerships and two tankers; unfortunately, the order for the four containerships was terminated later in the year. During the same period, U.S. shipyards delivered five commercial oceangoing ships and one non-oceangoing ferry.

Shipbuilding activity for the Navy continues to decline. The Navy's proposed FY 1998 - 2003 shipbuilding program will average 5.8 new ships a year, compared

to 6.7 new ships per year in the FY 1997 - 2003 shipbuilding program and 10 new ships per year in the 1992 - 1997 shipbuilding program.

The U.S. government and the shipbuilding industry have made great strides in their efforts toward industry revitalization and market transformation. The second-tier shipyards, comprised of small or medium size facilities, continue to build an assortment of vessels for use on the inland and coastal waterways, as well as for foreign markets. The big change has been the surge in activity relating to the offshore exploration, drilling and servicing sectors. These shipyards are expected to continue to prosper for the remainder of this decade.

WORLD SHIPBUILDING MARKET

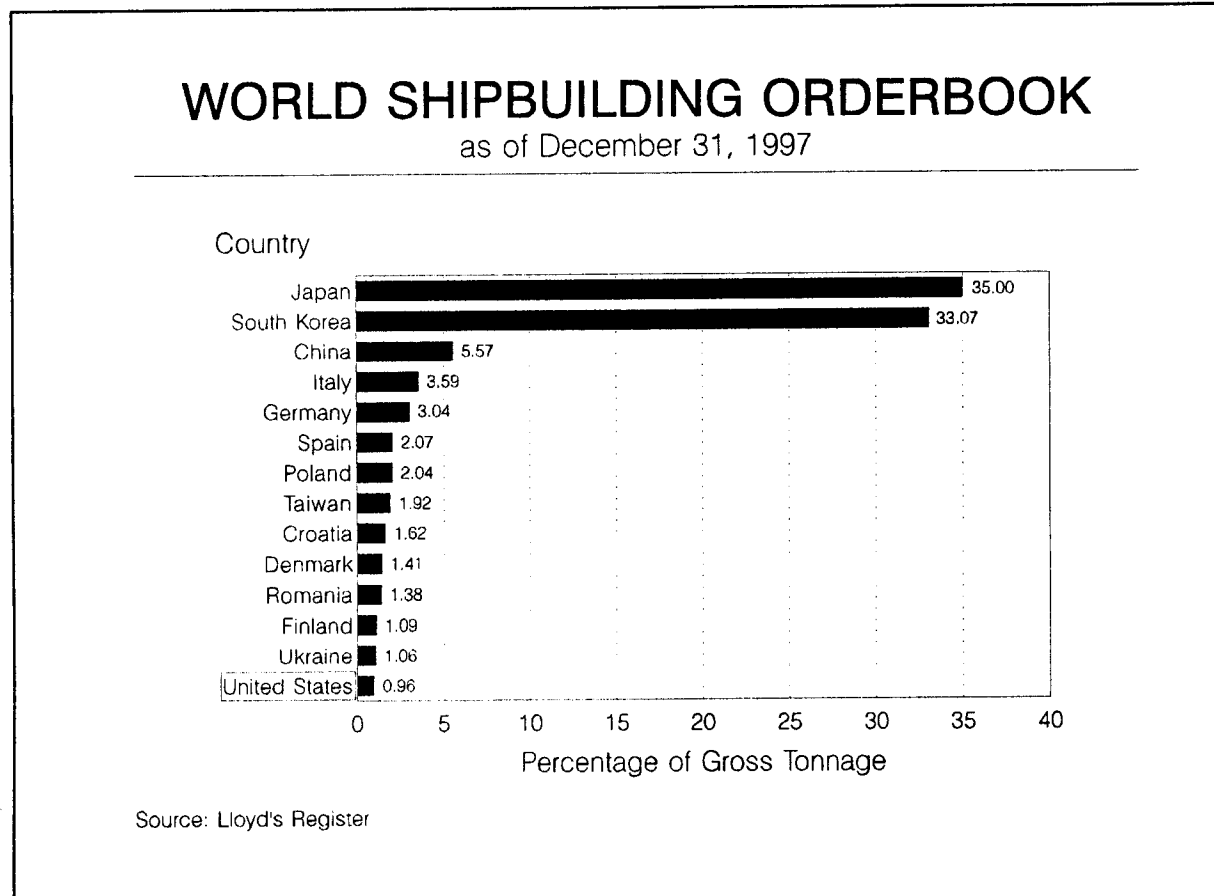
According to Lloyd's Register *World Shipbuilding Statistics*, the world orderbook for new ships, measured in gross tons, increased during the last year. As of December 31, 1997, the world orderbook for merchant vessels, 100 gross tons (gt) and over, consisted of 2,604 vessels totaling 56.6 million gt. This represents a 7.1 percent decline from the 2,802 vessels on order at the close of 1996, but an 18.7 percent increase in gross tonnage, from 47.7 million gt. The average size of merchant ships on order increased by a dramatic 27.7 percent from 17,026 gt at the close of 1996 to 21,736 gt at the end of 1997.

At the end of 1997, Japan retained the lead position in the world merchant shipbuilding market. Japan held the dominate position with 35.0 percent of the gross tonnage of merchant ships on order, followed by South Korea with 33.1 percent and the People's Republic of China, a distant third, with 5.6 percent of the international commercial shipbuilding orderbook (Chart 1).

At the end of the fourth quarter of 1997, the United States ranked 14th among nations with 1.0 percent of the world gross tonnage, compared with an orderbook

of 1.8 percent of the aggregate in the previous year. The U.S. orderbook declined from 854,435 gt to 541,355 gt as a result of ship deliveries between the fourth quarter of 1996 and the fourth quarter of 1997, a decrease of 36.6 percent in the gross tonnage of ships on order.

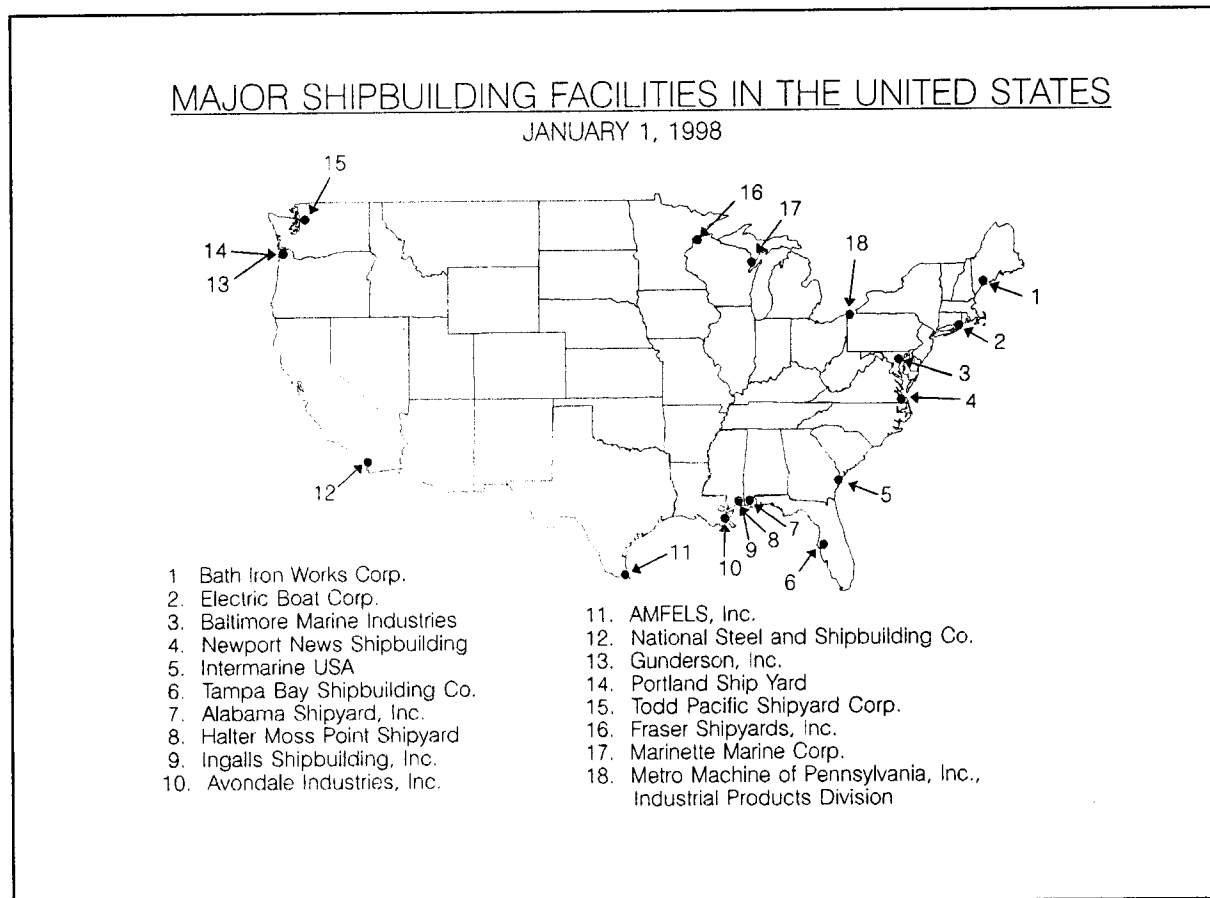
Chart 1



U.S. SHIPBUILDING

The benchmark used for tracking the U.S. shipbuilding industry is the U.S. Major Shipbuilding Base (MSB). The MSB is defined as those privately owned shipyards that are open, having at least one shipbuilding position, consisting of an inclined way, a launching platform, or a building basin capable of accommodating a vessel 122 meters in length or over. With few exceptions, these shipbuilding facilities are also major repair facilities with drydocking capability. As of January 1, 1998,

Chart 2



utilizing this definition, there were 18 major shipbuilding facilities in the United States (Chart 2).

According to the U.S. Department of Labor, aggregate employment in the U.S. shipbuilding and repair industry, as of December 1997, was 94,300, down 3,400 from the revised December 1996 number of 97,700. The MSB shipyards employ about 64 percent of the total work force of the shipbuilding and ship repair industry. The remaining 36 percent were in the 550 additional establishments (with 10 or more employees) classified under Bureau of Labor Statistics SIC 3731 (Shipbuilding and Repairing).

Not included in SIC 3731 are the five Government owned shipyards (four Naval and one Coast Guard yard), which do not engage in new construction, but rather overhaul and repair Navy and Coast Guard ships. As of October 1997, the total employment in the five Government shipyards was 22,735 people.

Industry Revitalization Efforts

Recognizing that U.S. shipyards needed to be able to compete in the international commercial shipbuilding market in order to remain viable, the Federal Government developed a multifaceted program to improve industry competitiveness in the international commercial shipbuilding market. On October 1, 1993, President Clinton submitted to Congress a report entitled "*Strengthening America's Shipyards: A Plan for Competing in the International Market.*" This report was the basis for the Administration's efforts to assist the U.S. shipbuilding industry in translating its skills from military requirements to a commercial focus in order to compete and obtain orders from international ship owners, thereby substantially increasing the industry's customer base. The President's five-part plan includes:

- Ensuring fair international competition
- Eliminating unnecessary government regulation
- Assisting international marketing
- Financing ship sales through Title XI loan guarantees
- Improving commercial competitiveness with MARITECH

In order to implement the plan, on November 30, 1993, the President signed into law the National Defense Authorization Act of 1994, containing the National Shipbuilding and Shipyard Conversion Act of 1993. The National Shipbuilding and Shipyard Conversion Act of 1993 expanded the existing Title XI Federal Ship Financing Program by authorizing the Secretary of Transportation to guarantee obligations issued to finance the construction, reconstruction, or reconditioning of eligible export vessels. It also authorized guarantees for shipyard modernization

and improvement projects. The Shipyard Act established a National Shipbuilding Initiative (NSI) program to support the industrial base for national security objectives. Its goal is to help reestablish the American shipbuilding industry as an internationally competitive industry.

Federal Assistance Programs

For over 40 years, MARAD has provided financial assistance to U.S. shipowners through the Federal Ship Financing Program (Title XI) and the Capital Construction Fund (CCF) program.

The Title XI program was established by the Merchant Marine Act of 1936, as amended, and provides for a full faith and credit guarantee by the United States Government for the purpose of promoting the growth and modernization of the U.S. merchant marine and U.S. shipyards. The Title XI program provides for Federal Government guarantees of private sector financing or refinancing obligations for the construction or reconstruction of U.S.-flag vessels in U.S. shipyards. Vessels eligible for Title XI assistance include, but are not limited to, commercial vessels such as passenger, bulk carriers, cargo, tankers, tugs, towboats, barges, dredges, oceanographic research and offshore oil supply vessels.

U.S. operators are permitted to establish a CCF. They can make qualified withdrawals from the Fund of the tax-deferred dollars to procure new or reconstructed vessels from U.S. shipyards.

In addition, the Federal Government continues to provide significant direct support to the industry through the procurement of goods and services from a large number of shipyards and related industries to repair government owned vessels. Principal government contracting agencies include the Naval Sea Systems Command, the Military Sealift Command, the Army Corps of Engineers, the U.S. Coast Guard, the

National Oceanic and Atmospheric Administration, the National Science Foundation and the Maritime Administration.

Title XI

Interest in the Title XI program has reached levels not seen since the early 1980's, as a result of the enactment of the National Shipbuilding and Shipyard Conversion Act of 1993. This Act expanded the program to make Title XI financing guarantees available to foreign shipowners and to shipyard modernization projects. This resulted in the approval in FY 1996 and FY 1997 combined, of more than \$1.4 billion in Title XI guarantees. MARAD has been asked to consider a variety of projects including river and power barges, tugs, double hulled product tankers and variety of drilling equipment including semi-submersible mobile offshore drilling units.

During FY 1997 and the first half of FY 1998, MARAD approved 17 applications for Title XI financing (Table 1). Included are two export projects and two shipyard modernization projects. The total estimated cost of these projects is \$803 million with Title XI guarantees totaling \$572 million. The two shipyard modernization projects have a total estimated cost of \$91 million with Title XI guarantees totaling \$80 million.

As of April 1998, MARAD had applications for 19 projects pending, including three shipyard modernization projects, for an estimated cost of \$952 million with Title XI guarantees totaling \$803 million. The pending Title XI applications included double hull product tankers, ferries, various offshore vessels, barges, tug/supply vessels and passenger ferries.

Table 1

APPROVED TITLE XI APPLICATIONS FY 1997 - 1998 as of April 1, 1998		
Company	Reason or Number Type of Ships	Loan Guarantee Amount (\$M)
SHIP PROJECTS		
COSCO Line (America), Inc.	4 1432 TEU Container Vessels	\$137.7
CPD Barge Company	18 Jumbo Hopper Barges	\$5.4
Trailer Bridge, Inc.	2 Triple Stack Box Carriers	\$10.5
Riverbarge Excursion Lines, Inc.	2 Hotel River Barges	\$15.9
Mersea Ships I, Inc.	2 SWATH 300-Passenger Commuter Vessels	\$29.9
Trico Marine International, Inc.	1 Twinhull Crewboat	\$9.6
Secunda Atlantic, Inc.	1 73.2 meter Anchor-Handling Tug/Supply Vessel	\$17.1
Cashman Equipment Corporation	7 Single-Skin Steel Flat Barges	\$6.6
Trailer Bridge, Inc.	3 Triple Stack Box Carriers	\$16.9
Noble Drilling Corporation *	1 Semi-Submersible Mobile Offshore Drilling Unit	\$96.9
Tugz International L.L.C.	6 Twin Z-Drive Reverse Tractor Harbor/Escort/Towing Tugs	\$28.1
Canal Barge Company, Inc.	30 Steel Open Hopper Barges	\$11.5
	2 79.2 meter Deck Barges	
	10 36.6 meter Deck Barges	
Attransco, Inc.	3 Tank Vessels	\$47.4
Western Power Co. (fka Ghana National Petroleum Corp.) *	2 Power Barges	\$59.9
SHIPYARD PROJECTS		
Massachusetts Heavy Industries, Inc.	Yard Reactivation	\$55.0
HAM Marine, Inc.	Shipyard Modernization	\$24.8
* Export Projects		

MARITECH Program

MARITECH is a five-year Federal program to provide matching Government funds to encourage the shipbuilding industry to direct and lead in the development and application of advanced technology to improve its competitiveness and to preserve its industrial base. The program is industry led and jointly funded by Government and industry with administration provided through the Defense Advanced Research Projects Agency (DARPA) of the Department of Defense in collaboration with MARAD.

MARITECH has both near-term and long-term objectives. In the near term, it is to assist industry in penetrating the international marketplace with competitive ship designs, market strategies and modern shipbuilding processes and procedures. In the long-term, the program is meant to encourage advanced ship and shipbuilding technology projects for promoting continuous product and process improvement in order to maintain and enlarge the U.S. share of the commercial and international market; this in turn, will ensure the availability of an experienced industrial base which is vital to national security in times of crisis.

MARITECH projects awarded during FY 1994 -1997 cover a wide range of themes from the design of various types of small vessels to large oceangoing ships, shipyard technology and advanced material technology. These projects have been awarded to 24 companies and their subcontractors located in 40 of the 50 states, the District of Columbia, Puerto Rico and 9 foreign countries.

MARAD MARITECH Projects

Since 1994, DARPA and MARAD have jointly selected a total of 65 projects valued at \$357 million of which 40 projects valued at \$172 million were assigned to MARAD to administer (Table 2). There was no funding provided for new projects in FY 1998. Several existing projects, however, were extended with follow-on work phases.

At present, 27 MARITECH projects are ongoing which are being administered by MARAD. These projects range from innovative design and marketing strategies of high technology vessels to research in advanced manufacturing technology processes and procedures. Information on MARAD administered projects are available on the World Wide Web via the National Maritime Resource and Education Center (NMREC) Home Page (<http://nmrec.dot.gov>). A MARITECH Projects index file is available for review and lists MARAD administered projects. From this index,

MARITECH project information files are available for review, including such information as project title, project consortium members, project objectives/overview, project status, and government and private sector contacts.

Table 2

MARITECH Projects by Fiscal Year (Millions of Dollars)				
Fiscal Year	Number of Projects	Total Value (\$M)	Government Funded (\$M)	Industry Matching Funds (\$M)
FY 1994	19	\$ 92.5	\$ 43.4	\$ 45.2
FY 1995	26	\$ 100.9	\$ 46.9	\$ 53.6
FY 1996	11	\$ 83.8	\$ 38.5	\$ 45.2
FY 1997	9	\$ 79.8	\$ 36.6	\$ 43.1
Total	65	\$ 357.0	\$ 165.3	\$ 187.1
No. Of Projects Managed by MARAD	40	\$ 172.0	\$ 80.0	\$ 87.8
No. Of Projects Managed by DOD	25	\$ 185.0	\$ 85.3	\$ 99.3

Commercial Ship Construction

New Orders

In 1997, the U.S. shipbuilding industry received orders for the construction of six new oceangoing commercial ships. Early in 1997, Alabama Shipyards received an order for four 1,432 TEU containerships for export for COSCO Line (America), Inc.; unfortunately, the order was terminated later in the year. In mid-1997, Avondale Industries received a \$332 million order from ARCO Marine, Inc., to build two

82,545 GT (125,000 dwt) crude carriers valued at \$332 million. The tankers ordered by ARCO are the largest ships ordered from a U.S. shipyard since 1984. Additional orders for these shuttle tankers are expected to be placed by other owners during 1998. During the first quarter of 1998, U.S. shipyards did not receive any new orders for oceangoing commercial ships.

Deliveries

During 1997 and the first quarter of 1998, U.S. shipyards delivered five commercial oceangoing ships. Avondale Industries of New Orleans, LA, delivered one 27,854 gt and two 24,474 gt tankers reconstructed as double hulled product carriers, to American Heavy Lift (Table 3). The reconstruction involved the cutting of the tanker in two, removing the existing forebody of the vessel, construction and attachment of a new 155 meter double hulled forebody.

Newport News delivered the first of six double hulled product tankers. The 30,340 gt tanker, *American Progress*, originally ordered on October 31, 1994, by Fleves Shipping Corporation, was sold to Mobil Oil in early 1997 and delivered to the new owner in September.

Alabama Shipyard delivered the first of two 11,000 gt chemical carriers, which were ordered in late 1995, to Dannebrog Rederi AS of Denmark. In addition, Todd Pacific Shipyard, Corp., Seattle, WA, delivered one 4,340 gt non-oceangoing passenger/vehicle ferry to the Washington State Ferry System.

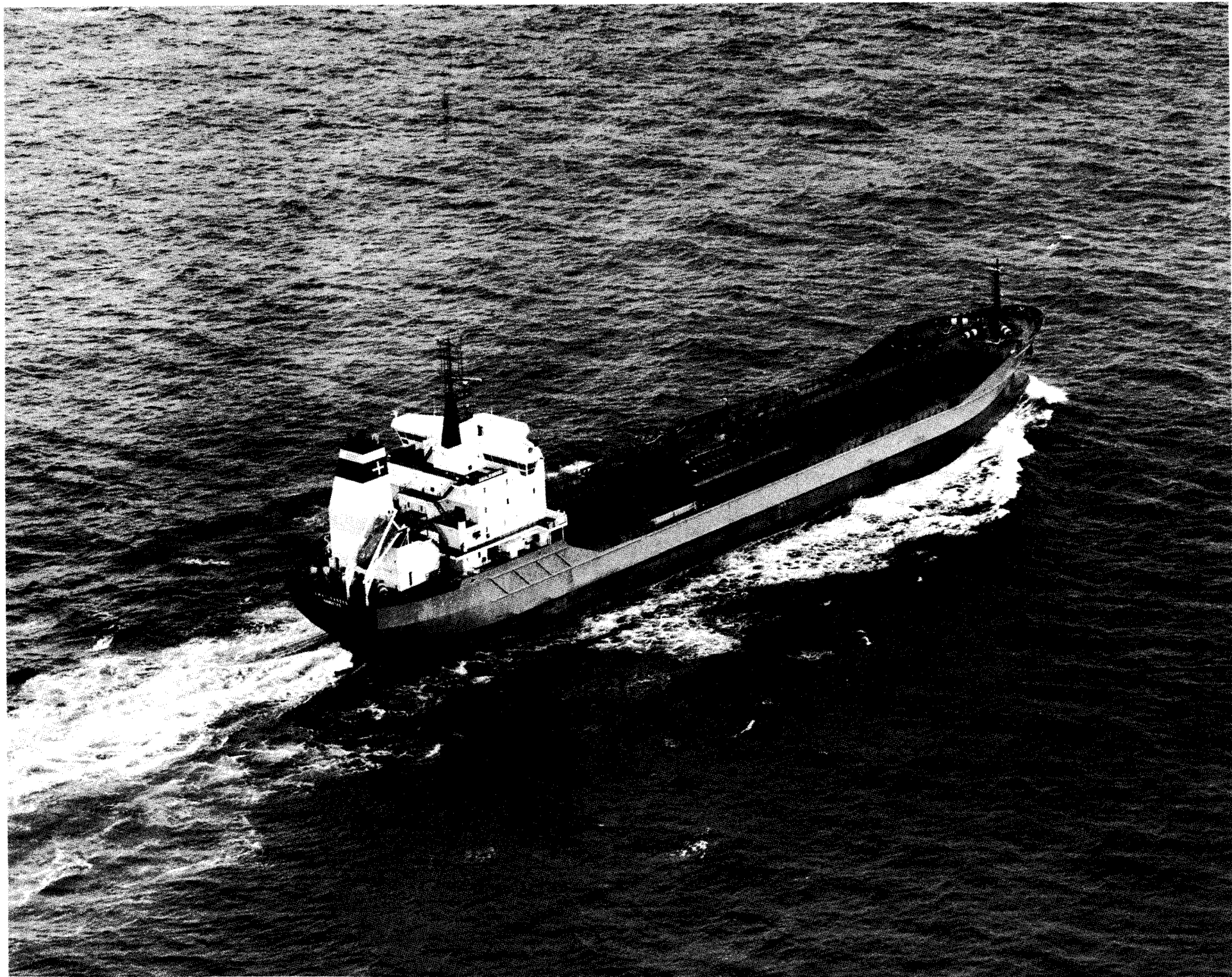
Table 3

COMMERCIAL VESSELS DELIVERED January 1997 - March 1998 (1,000 GT and OVER)					
SHIPYARD	DESIGN TYPE	VESSEL NAME	GROSS TONS	DELIVERY DATE	APPROXIMATE CONTRACT PRICE (in Millions)
OCEANGOING					
Avondale Industries	Product Tanker	ANASAZI	27,854	01/16/1997	\$39.8
Avondale Industries	Product Tanker	NEW RIVER	24,474	06/05/1997	\$39.8
Avondale Industries	Product Tanker	THE MONSEIGNEUR	24,474	09/22/1997	\$39.8
Newport News SB	Product Tanker	AMERICAN PROGRESS	30,415	09/26/1997	\$38.2
Alabama Shipyard	<u>Chemical Carrier</u>	AMALIENBORG	<u>11,000</u>	03/27/1998	<u>\$26.7</u>
	5 Ships		118,217		\$184.3
NON-OCEANGOING					
Todd - Seattle	<u>Ferry</u>	TACOMA	<u>4,340</u>	08/15/1997	<u>\$60.5</u>
	1 Ship		4,340		\$60.5

Current Orderbook

The U.S. orderbook for commercial ships, as of April 1, 1998, consisted of five 30,415 gt tankers at Newport News Shipbuilding, one 11,000 gt chemical tanker at Alabama Shipyard, two crude carriers at Avondale and three ferries, two at Todd Pacific Shipyard and one at Halter Moss Point Shipyard.

The tankers at Newport News are being constructed for two different companies. One tanker is scheduled for the export and four tankers are for the domestic U.S. trade and will be in compliance with OPA-90 requirements. The last tanker is scheduled for delivery in June 1999.





In March 1997, Newport News announced that it would leave the commercial shipbuilding business by the middle of 1999. The company further announced the cancellation of the construction of three tankers, thereby permitting them to deliver the remaining tankers by mid-1999 and thereafter exit the commercial shipbuilding market. It has been reported that a Newport News/Hvide Marine joint venture would have ownership of four of the five tankers remaining.

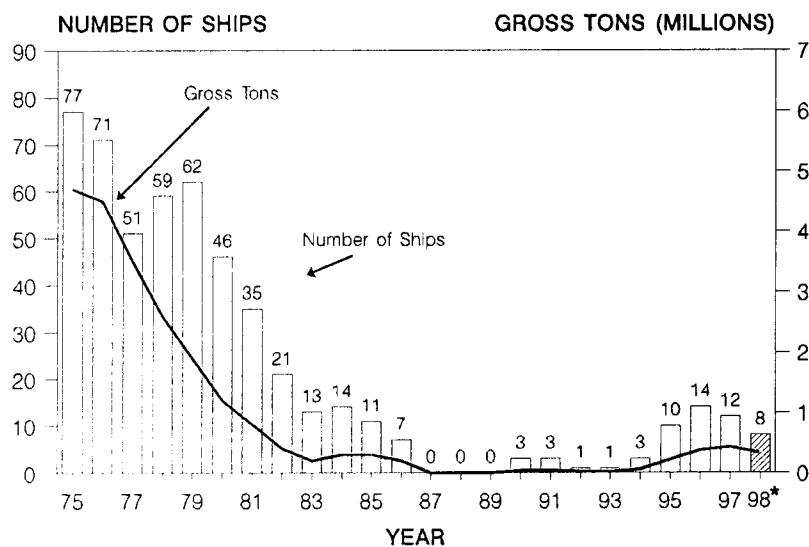
Alabama Shipyard is constructing one chemical tanker, for export, for Danneborg Rederi AS of Denmark, which is scheduled for delivery in 1998.

All of the product tankers at Newport News Shipbuilding and the chemical tanker at Alabama Shipyard were made feasible with the assistance of the MARAD's Title XI Federal Ship Financing Program. The crude carriers under construction at Avondale Industries for ARCO Marine, Inc., a subsidiary of Atlantic Richfield Company, are being financed by the parent company and withdrawals from its Capital Construction Fund administered by MARAD. The end year orderbook since 1975, updated to April 1, 1998, is shown below (Chart 3).

In addition, there are three ferries larger than 1,000 gt on order or under construction: one 12,904 gt oceangoing ferry is on order at Halter Moss Point Shipyard, and two 4,350 gt non-oceangoing passenger/car ferries are under construction at Todd Pacific Shipyard.

Chart 3

COMMERCIAL SHIPBUILDING ORDERBOOK HISTORY (AS OF DECEMBER 31) SHIPS OF 1,000 GROSS TONS AND OVER



* 1998 data is as of April 1, 1998

The end year orderbook updated to April 1, 1998, totaled 11 vessels (eight commercial oceangoing ships and three ferries) with original contract values of approximately \$777.9 million (Table 4). Six of the 11 vessels are covered by Title XI financing guarantees with original contract values totaling \$239.9 million, with MARAD providing \$209.9 million under this program.

COMMERCIAL SHIPBUILDING ORDERBOOK

1,000 GT OR LARGER
(as of April 1, 1998)

SHIPYARD	DESIGN TYPE	VESSEL NAME	GROSS TONS	AWARD DATE	ESTIMATED DELIVERY DATE	APPROXIMATE CONTRACT PRICE (in Millions)
Newport News SB	TANKER	AGATHONISSOS	30,415	10/31/1994	08/15/1998	\$38.2
Newport News SB	TANKER	CAPE LOOKOUT SHOALS	30,415	07/05/1995	04/17/1998	\$38.2
Halter Moss Point	FERRY	KENNICOTT	12,904	11/06/1995	04/17/1998	\$85.0
Todd Pacific Shipyards	FERRY	WENATCHEE	4,340	06/20/1995	04/28/1998	\$60.5
Newport News SB	TANKER	CAPE DIAMOND SHOALS	30,415	07/05/1995	05/22/1998	\$38.2
Newport News SB	TANKER	AMBROSE CHANNEL	30,415	02/12/1996	06/07/1999	\$49.3
Alabama Shipyard	CHEM CARRIER	AGGERSBORG	11,000	12/29/1995	06/15/1998	\$26.7
Newport News SB	TANKER	BRENTON REEF	30,415	02/12/1996	12/18/1998	\$49.3
Todd Pacific Shipyards	FERRY	PUYALLUP	4,340	06/20/1995	12/24/1998	\$60.5
Avondale Industries	CRUDE CARRIER	-unnamed-	82,545	06/30/1997	01/26/2000	\$166.0
Avondale Industries	<u>CRUDE CARRIER</u>	-unnamed-	<u>82,545</u>	06/30/1997	08/31/2000	<u>\$166.0</u>
	11 Ships		349,749			\$777.9

Table 4